ABSTRACT

A signal amplifier includes a splitter for splitting an input signal into first and second signals, first and second bias control networks for generating a base bias signal for a Doherty amplifier in accordance with a power level of the input signal, a carrier amplifier for amplifying the first input signal, a peaking amplifier for amplifying the second input signal and a Doherty output network for combining the amplified signals. Through a simplified transformation of characteristic impedances in the Doherty output network, minimization of circuitry including the signal amplifier is obtained. Further, by controlling the Doherty amplifier in accordance with the power level of the input signal, both high efficiency and high linearity of the signal amplifier are achieved.